

The

JULY 1960 2/6

GEOGRAPHICAL

MAGAZINE



ALL CLASSES OF INSURANCE TRANSACTED

CAR & GENERAL

INSURANCE
CORPORATION,

LTD.

83 PALL MALL, LONDON, S.W.1

Visit New Zealand

Reduced rates from February to June

THE NEW ZEALAND SHIPPING CO LTD

138 LEADENHALL STREET, LONDON, EC3. Tel: AVENUE 5220

ESCUDO
is pure
tobacco

COPE'S
ESCUDO
NAVY DE LUXE
A CHOICE & UNIQUE BLEND, SCIENTIFICALLY MANUFACTURED
free from all scent or added flavours
PURE TOBACCO
LIVERPOOL & LONDON
No. 2

COPE BROS. & CO. LTD.
LIVERPOOL & LONDON

Djerba: Island of the Lotus-Eaters

by ALAN ROSS



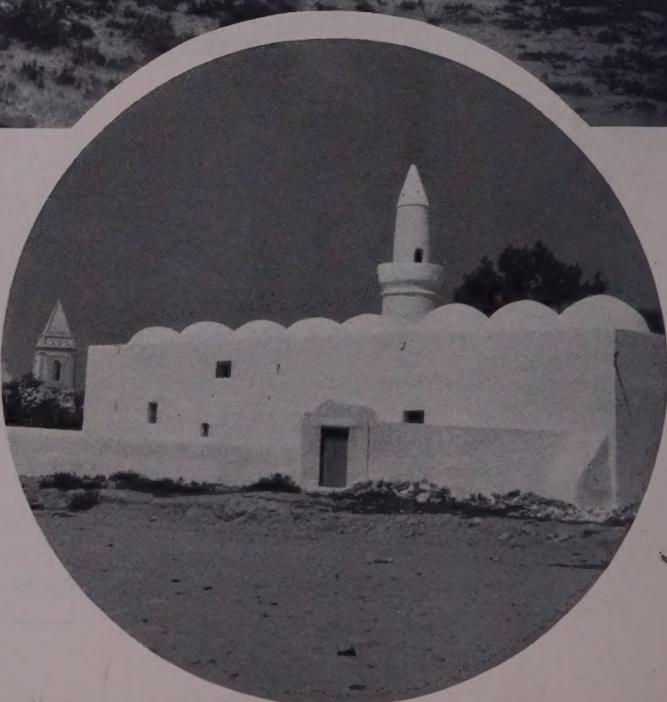
All photographs by the author

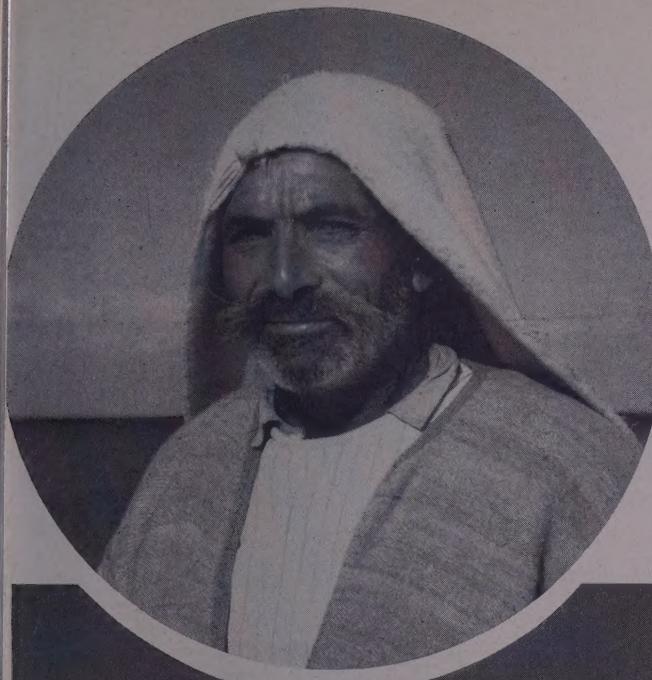
Djerba, off the Tunisian coast, is the oasis-island associated in Homeric legend with the *lotophagi*, the lotus-eaters, who, having once eaten of the lotus tree, lose all desire to return home. Few islands in the world, least of all in the Mediterranean, give off so profound a feeling of insulation from continental life. It is at once the most remote and most accessible of places, the most deserted yet most compelling in its final claim on the affection of its inhabitants. Set up as a Phoenician trading post in 1000 B.C. Djerba releases its Berber natives for most of their working life. It is a place to be born in, and to retire to; a place for the very young, for the very old





(Above) Without rivers or springs, Djerba has over 3000 wells, 2000 cisterns. Camels draw the water up in goatskin containers. The island, 240 square miles in area, is less than fifteen miles long, with the hills of Guellala rising to a height of only 150 feet. Otherwise palm trees, embedded in sand, make Djerba from the air look like a sea-borne hairbrush. (Right) Nearly every building—house or shop, mosque or synagogue—is of dazzling whiteness. Though largely Berber, Djerba has long had a Jewish community, decimated in recent years as a result of the founding of Israel





(Left) If Djerbans are known throughout Tunisia as grocers (over 11,000 Djerbans run such shops in Tunis) they are renowned also as fishermen, especially of sponges. The long sand beaches, which you can have to yourself the year round, are not only wonderful for swimming: the off-shore waters contain some of the best fishing in the Mediterranean. Bass, umbrina, jewfish, mullet, among others, are almost embarrassingly available for catching or merely for observing. A *fondouk* (below), an inn for farmers and their cattle on the move, in a semi-abandoned Jewish village. Djerba consists very largely of small-holdings, each with its *menzel*, a white fortified farmhouse, with dome and turreted corners







Houmt-Souk, the main centre of population, contains a couple of hotels, an open-air market place, and the largest of the bazaars. Once a centre for the purple dyes introduced by the Phoenicians, Houmt-Souk now handles pottery, weaving, fishing and garden produce. The wool blankets, in brilliant sky-blue stripes, are among the most handsome of the local products. Daily, under the olive trees, goods are set out for sale and distribution. By noon, sleep claims many of the merchants, while others return to the menzels



(Above) From the quays of Houmt Souk *mahonnas* sail to Sfax and Tunis. These twin-masted vessels, similar to the small inter-island sloops that ply among the West Indies, act as Djerba's main lifelines. Yet the journey is easy: you can reach Djerba from Tunis by air, road or rail; the latter two routes run through the desert to Gabès and then across a causeway. (Left) From Djerba, geological surveys of the Sahara are carried out by charter planes such as this one from Hunting Aerossurveys Ltd. Nevertheless, despite this ease of access, Djerba remains totally undeveloped—a moored oasis, with dwarf palms, not tourists, crowding the beaches, and the swarming fish untroubled by harpoon or spear

The Nudo de Apolobamba



La Paz, capital of Bolivia and the highest capital city in the world. Illimani rises up behind

Explorations on the Bolivia-Peru Border

by W. H. MELBOURNE

Leader of the Imperial College Apolobamba Expedition

IT was late one afternoon last July. Sounds of the fiesta were dying in the distance and clouds were creeping up the valley to choke the small village of Pelechuco high up in the Bolivian Andes, when a shy little Indian girl handed me a pottery mug full of the drink called *chicha*. I felt slightly nauseated for I knew that this local brew was fermented with human saliva, but there was no escape. With a few quick gulps I accepted the hospitality of these friendly Indians who were to let us have ten mules or ponies to carry our food and equipment into the Apolobamba mountains.

There were six of us, all members of the Imperial College, London University, under the leadership of Dr Geoffrey Bratt. We had come to explore and climb some of the peaks in one of the last remaining unentered areas of the Andes, on the Bolivia-Peru border.

We had arrived in the Apolobamba by way of the Bolivian capital, La Paz, which nestles 12,000 feet above sea-level in a huge hollow in the *altiplano*, the plateau between the two cordilleras of the Andes, which then meet further north in the *nudo*, the knot, of the Apolobamba. Towering over the bustling

modern city are the ice-peaks of Illimani, a giant mountain rising to 21,000 feet and looking almost close enough to touch, although in fact it is twenty-five miles away. More than half the population of the city are the gaily dressed Aymara Indians. The women in particular are brilliant in shawls, skirts and petticoats of every colour in the rainbow and every one of them is bedecked with a 'bowler hat'. These come in several different shades, and even the little girls wear them though they are often so large as to fall down over their eyes. The Indians in La Paz either run little open-air stalls to sell their food products and handicrafts such as clothes and ponchos made from the tough llama wool, or they are domestic servants and labourers.

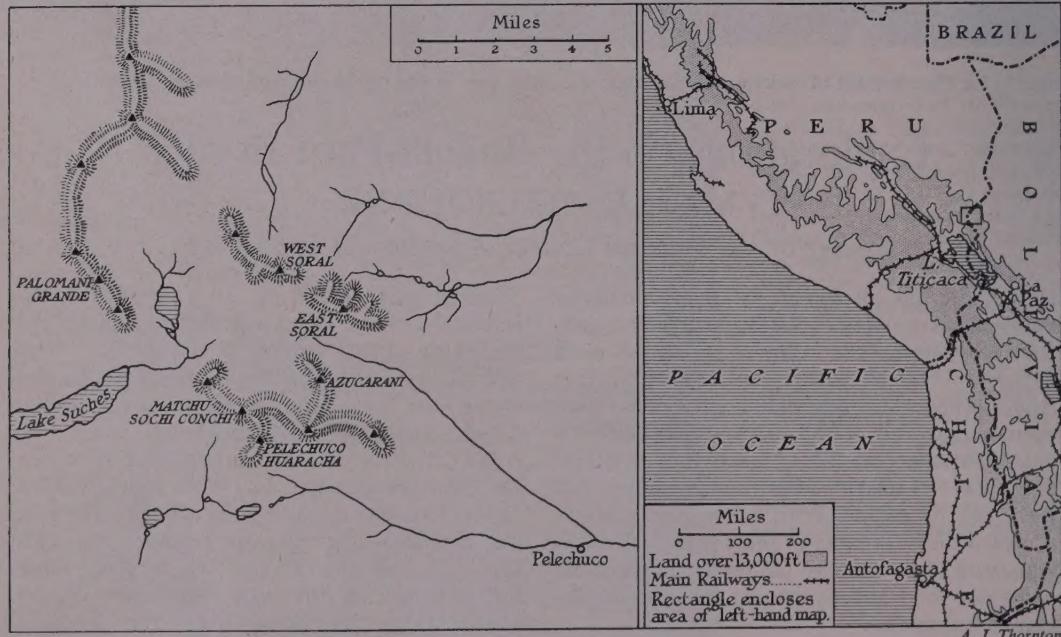
There were many nostalgic memories for Geoff Bratt and myself, both Australians, because of the thousands of eucalyptus trees in La Paz and most of the surrounding villages. The cold, clear, high-altitude air carries the strong scent of these gum trees, and occasionally a waft of the burning wood. They were imported from Australia by the Englishmen who built the railway line over half a century ago.

We had left La Paz in a truck owned by our hosts, the Club Andino Boliviano, and were soon bouncing along a dusty road over the desolate wastes of the altiplano towards the shores

of Lake Titicaca. On the way we passed innumerable trucks piled high with farm produce and, on top, about two dozen Indians all headed for a few days in the big city. Some of the lorries were, rather surprisingly, loaded with great chunks of ice which are cut from a nearby glacier for sale in La Paz.

The villages were frequent round the shores of Lake Titicaca, with clean-looking houses built with mud bricks and thatched roofs, but as we headed north they became fewer and smaller. Eventually we caught sight of the ice-peaks of the Apolobamba mountains in the distance. We had now come to the land of the llama and alpaca, sturdy sheep-like animals which roam the high pampa. They are partly domesticated by the semi-nomadic Indians for their wool and occasionally used for meat when they are very old.

The truck left us about ten miles from the village of Pelechuco, where we went to try to hire mules and ponies to take us further into the mountains. It took us three days to obtain them because none of the Indians wanted to leave during the fiesta which was being held at the time. On these feast-days they dance on and on until they drop, fortified by a considerable amount of firewater which they call *alchul*, a drink like raw methylated spirits, but not as foul as the chicha. Although they are nomin-





All Kodachromes by the author

Gaily dressed Aymara women, wearing the inevitable 'bowler hats' of the Andean Indians, at one of the streetside markets in La Paz. The shawls and ponchos on sale are mostly made from llama wool

The start of the fiesta in the little village of Pelechuco, high up in the Apolobamba Mountains in the Bolivian Andes. The fiesta began late in the afternoon with a procession of ponies and then the village men danced all night through to a drum and fife band, fortified at short intervals by draughts of powerful alcoholic brews





The ponies hired from the villagers of Pelechuco to carry the expedition's food and equipment to the base camp deep in the mountains. After they reached the camp, the ponies were taken back to their village by the same route. A muleteer and two other men, all Aymara Indians, came to look after the ponies, which only carried small loads, as the rate of hire was 'per beast per day'



Llamas, semi-domesticated by the Indians, were found grazing at 17,000 feet up, on the pass from which the expedition members had their first close view of their goal, the Apolobamba Mountains

ally Christian they wear the most grotesque and un-Christian masks. Pelechuco was the centre of an ancient Spanish mission and the old church still stands near the centre square, a building ten times the size of anything else in the village; about half-way through the fiesta everyone trooped through it with hand-carved candles which remain unlit, presumably to be saved for the next time.

We left Pelechuco at last, when the fiesta was over. After several days' marching with the mules and ponies we set up a base camp at the snout of the large Azucarani glacier. It was about this time that we were feeling the effects of our rapid rise from sea-level to 17,000 feet. Headaches were common and several of the party who had come up in three days were vomiting after any strenuous work; after five days or so these symptoms began to disappear. Even then we remained very conscious of the rarified atmosphere, and any exertion made us breathless, causing our movements to slow down and, particularly in the first weeks, prohibiting any conversation while walking or climbing.

It took us about three days to set up a camp high up on the side of the Azucarani glacier. At this stage Ewart and Garrard left us for a month to make a geological traverse northwards over the Apolobamba mountains and down towards the Amazon basin. They took with them an Aymara Indian porter named Venancio. His surreptitious attempts to lighten his own load and teach them to live off the land had little success, and they must have seemed exceedingly ungrateful when, after he had spent all morning standing in a glacial stream, he presented them with his shoe containing fifteen small fish, which did not appeal to their palates. However, no objections were raised to the two handsome lake trout which he obtained later from a little village by the barter of three empty porridge tins.

The rest of us, Bratt, Jenkinson, Smith, myself and Carraffa, a Bolivian who accompanied us for the first two weeks, started to make several ascents in the Matchu Sochi Conchi group. During these climbs we located four of the peaks which had been intersected during a border survey undertaken by a team under the direction of the Royal Geographical Society about fifty years ago. We used these intersected peaks as the base for the plane-table survey which was carried through the entire central

area of the Apolobamba, and we also used them as the base for our photo-theodolite work locating the snouts of the glaciers. It was on one of these earlier climbs that we reached the summit of Pelechuco Huaracha, just over 18,500 feet. The summit was of a most unusual ice formation, being shaped like a very steep-sided ridge-tent with a fifteen-foot tunnel running right through the middle about thirty feet under the top ridge.

One of the most difficult climbs that we tackled was the East Soral Peak. A long approach to it from our main food dump entailed crossing the big Azucarani glacier, with its many crevasses and, in particular, the rather inexplicable stepped crevasses. These were twenty- to thirty-foot ice-cliffs which terraced the glacier every fifty yards and made the first crossings very slow until we established a route avoiding the worst of the chaos of ice. Once over the glacier, we set up our tents on a ledge of rock high above the valley. Opposite towered the south face of the East Soral Peak, with its ice-falls dropping nearly vertically from the cone-shaped summit to the glacier below.

It was a far more forbidding prospect than we had imagined and any thought of an approach from this side was right out of the question. The following morning a reconnaissance party went out to see if there was a possible approach from the other side. After bivouacking for the night in a miserable snowstorm they returned to say that brief glimpses through the cloud had shown that the north side looked possible, although still very steep. Two more days were spent on the rock-ledge weathering the storm before we set out on the strenuous march round to the back of the peak, with eight days' food, paraffin fuel for the stoves, and equipment on our backs, totalling about sixty pounds apiece—quite hard work at 17,000 feet.

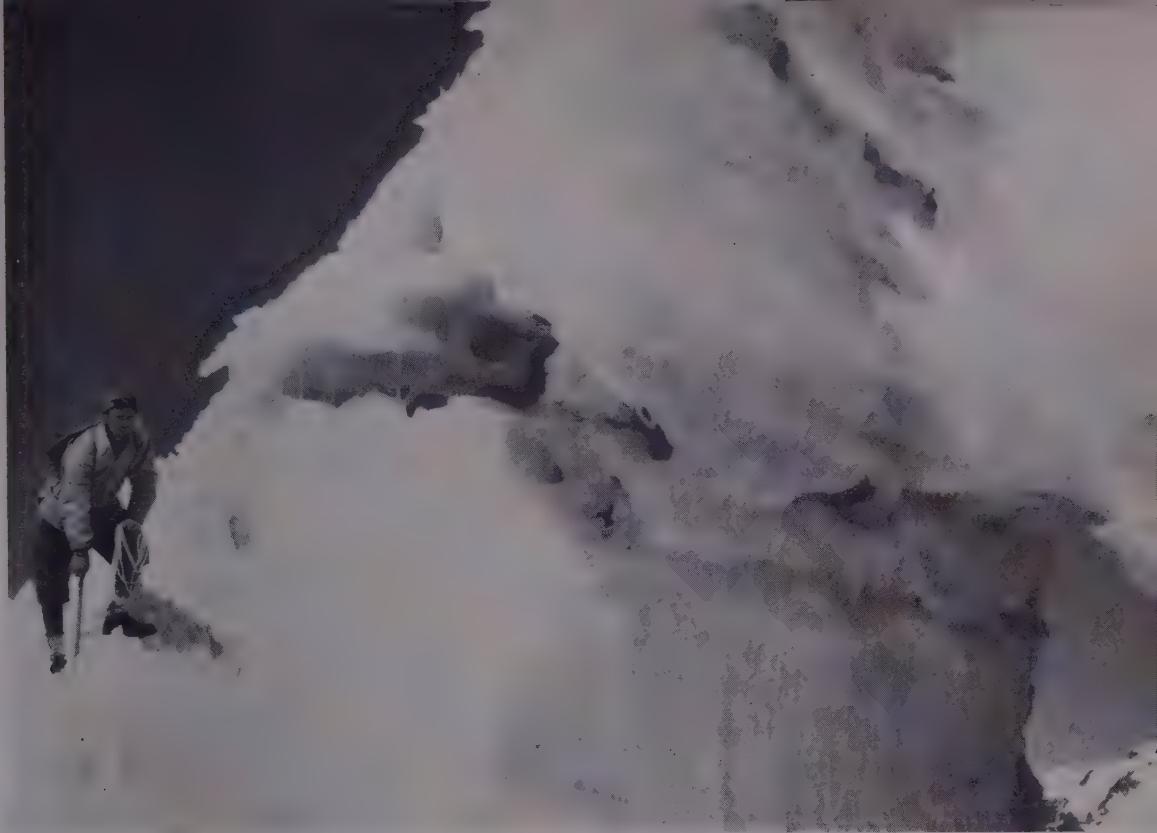
For the first time now we struck the cloud that rises almost every midday from the steaming Amazon jungles to the north, making it impossible to do any plane-table surveying in the afternoons. Even climbing became hazardous. Our first attempt on the summit of the East Soral Peak, along the east ridge, was forestalled in the last 1000 feet of the ridge by huge cracks in the ice and several formidable overhanging cornices.

Next morning we tried the more direct route on the northern face which had originally been rejected because of the rotten and loose nature



(Left) The author on the summit of Matchu Sochi Conchi, with the photo-theodolite for locating glacier snouts. *(Below)* The first high camp on moraine beside a small glacier in the Matchu Sochi Conchi group, base for the early ascents and for the plane-table survey. *(Opposite, top)* The hollowed ice summit of Pelechuco Huaracha, with Cololo Peak seen through the tunnel. *(Opposite, bottom)* The crossing of the Azucarani glacier was slowed down by stepped crevasses. The Azucarani Peak was capped by an immense cornice





of the rock on the face. We started out in the bitingly cold air at dawn after a quick breakfast of porridge-oats soaked in coffee. Initially on this day we intended to climb a steep ice-gully leading to a narrow ridge 1000 yards short of the summit. However, after a short time it became obvious that this route would be dangerous because of the thin covering of ice on the rock which flaked away under our crampons in a most alarming fashion. (Crampons are the metal spikes strapped to the rubber sole of each climbing-boot.)

The only remaining alternative was to move out of the gully and climb the 300-foot rock-face itself, which was free of ice to the ridge. After two hours of sometimes delicate work, leading out about eighty feet each time on the

nylon ropes, we reached the top of the face under a slightly overhanging rock-shelf. Moving carefully from here onto the ridge and then alternately on rock and ice, we eventually reached the base of the final 300-foot conical summit. We stopped to put on crampons again and, cutting occasional steps with the ice-axes, made the last few feet to the summit.

Around us on all sides was a gigantic three-dimensional map of mountains, glaciers and, far away to the north-east, the jungle dabbled with the midday cloud rising up to meet us. It was the moment that makes all the hard work seem worth while, in an incomparable setting and from a vantage-point that nobody had ever attained before.

After about a month in the field the two

From the edge of the Azucarani glacier the expedition first looked at the formidable East Soral Peak, one of its main climbing objectives. It was reached ten days later from the north side





Cutting the last 200 feet to the summit of West Soral Peak. Both Sorals were first ascents

parties reunited at an old gold mine on the western edge of the mountains. The gold had been mined from a quartz reef at 16,000 feet, just below the snout of one of the smaller glaciers on Palomani. It caused our geologists some embarrassment because they could not find any gold until they panned some of the mud in the glacial stream. It was at this time that our diet of dried meat and vegetables was given a welcome boost with the addition of vicuña steaks. This antelope-like animal, smallest of the llama tribe and much prized for its beautiful soft fur, was run to earth by a dog and killed by our Indian porter. He also caught several viscacha, little animals like rabbits, which infest the lower scree slopes and moraines, where

they make their burrows in the rock debris.

When our surveying was nearly completed, and most of the other less difficult mountains in the area had been climbed, we decided to direct our energies to the conquest of the West Soral Peak. Several earlier attempts from the southern side had been thwarted by the thigh-deep powder snow which lies on the south-facing slopes. The north-facing slopes are always much harder, as the midday sun—for we are in the southern hemisphere—melts the snow, which then freezes into a firm crust during the night, and it is possible to walk on this crust until the mid-morning.

The approach from the north was about four miles up one of the biggest glaciers in the area,



One of the expedition's geologists, Ewart, panning for gold in a glacial stream on the east side of Palomani Grande, watched by their only Aymara Indian porter, Venancio, who accompanied them throughout

which was nearly as heavily crevassed as the Azucarani glacier. Bratt and Jenkinson made the first reconnaissance and established a camp in the middle of the glacier about two miles up. The following day Ewart, Garrard, Smith and I followed their steps and found the tent and equipment that they had dumped. Camping on the ice that night, we slept fairly comfortably in our sleeping-bags with hip-length air-mattresses as an additional insulation. Some nights later at this camp we recorded a temperature of 34° Fahrenheit below freezing-point, at which stage the thermometer became jammed.

The party rose early next morning to be on the glacier before the sun had started to soften the

top crust, and after several hours' climbing we made the ridge at the head of the glacier. From there on crampons had to be used on the hard ridge-ice all the way to the summit. The last 200 feet were very steep, with the ice sweeping almost straight down beneath our boots 3000 feet to the glacier below; but with a lot of step-cutting we made the top just before midday.

The return down the glacier proved very tiring, as by now the top of frozen snow had melted and every few steps we would break through and sink down over our knees. So we floundered rather than walked back to the tents, where warm drinks were quickly made ready. One gets incredibly thirsty and dry on climbs like this in a blistering sun and breathing heavily through the mouth all the time, and it is only back in the tents that one can discard the dark goggles without which the dazzling sun would soon cause snow-blindness.

After one and a half months in the mountains, our time was drawing to a close and we made our way back down Lake Suches. Here we were met by Señor Farwig, the President of the Club Andino Boliviano, who, by an amazing feat of manoeuvring, had driven a small bus up into the mountains as far as Suches. On

the way down we saw many species of geese and ducks and shot some. During our stay in the Apolobamba we had completed a geological survey of 500 square miles, an accurate topographical survey of 170 square miles, and had reached the summit of fourteen previously unclimbed peaks of over 18,500 feet.

We returned to La Paz, bearded and incredibly filthy, to be given a wonderful reception by the Club Andino Boliviano and the British Embassy, both of which had given the expedition a great deal of voluntary help. Just before we left we were made the guests of honour at an Embassy garden party, at which we were as conspicuous as tramps at a debutante ball.

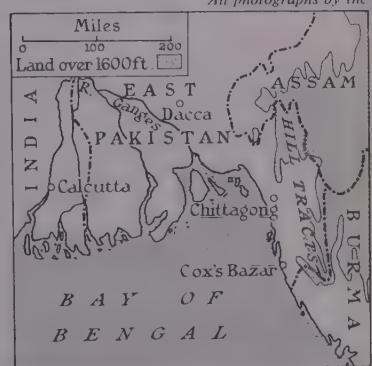
The Maroongs of Chittagong

by SHAMSUL ISLAM



All photographs by the author

The Maroongs are an aboriginal tribe and the smallest of the eleven tribes that live in the Chittagong Hill Tracts of East Pakistan. They number about 2000. Although nomadic, they confine themselves to a limited area to the east and south-east of Chittagong, down to the Burma frontier east of Cox's Bazar. This country is largely forest and the Maroong villages are scattered on hill-tops, with their farms in clearings in the surrounding valleys. They are an agricultural people, growing rice, cereal, pumpkins and cotton, so that they are almost self-supporting. A hereditary headman governs each village and he is their spokesman. It is he who goes to the town every two months to obtain by barter what the village requires, such as salt and matches. Strangers have to deal entirely with the headman. Among themselves the Maroongs are a cheerful and happy people; by religion they are animists, with strong leanings towards Buddhism. The boys, like these three, wear their hair long and it is done up in a knot, either on top of their heads or at the side



A. J. Thornton





The Maroongs wear only scant clothing, and this is woven by them from the cotton they grow. The cloth is generally blue and bordered with red. They decorate themselves with beads and white-metal ornaments in their hair and on their ears and arms. The belt which the mother is wearing (*opposite*) is of coins. Not all their days are spent in the sun: they need the comfort of a fire (*above*) and a cotton cloak on winter mornings. They keep pigs and chickens, but no cattle; they hunt deer with bow and arrow or spear, dressing up in red to add a measure of symbolic ferocity to the occasion. Rice and vegetables, however, are their staple food. Pumpkins are sliced up (*right*) after boiling and spices are added. The rice too has been boiled and is spread on mats on the criss-cross bamboo floor of the hut to dry



After drying, the rice is put in a wooden mortar (below) for husking. The husks are separated (right) by winnowing and the rice falls into the bamboo basket. Finally it is boiled again





The houses of the Maroongs are of bamboo and are raised on stilts as a protection against wild animals. They keep their chickens and dogs underneath. The roof is a thatch of grass or reeds. When they move off to a different district these houses are left empty. The bamboo is being cut with a knife of the kind that would also be used for farm work, cooking, or chopping up freshly killed meat. The village headmen are responsible to three regional chiefs, who rule the Hill Tracts and are loyal to the Government of Pakistan



The Maroongs are very fond of dancing, but only unmarried men and girls between the ages of fourteen and eighteen are allowed to take part. They dance in the evening after work, sometimes late into the night, but they are always up early next morning for their work in the fields. They play a bamboo flute, which is painted red, or a reed pipe with a great drone sticking out of a gourd of water, which gives a vibrant quality to the wild, primitive music. The dancers move slowly, swaying and stamping, sideways, backwards, forwards. But civilization is not far away. On the northern edge of their country the paper mills at Chandraghona and the hydro-electric scheme at Kaptai are already threats to the Maroongs' way of life

Taming the Yellow Dragon

by NIGEL CAMERON



All photographs by the author

The Yellow River, approaching San Men Gorge. Blasting on one of the two major islands in the gorge, which were almost completely removed. The dam now straddles the river in their place

THE Yellow River is 2900 miles long, second only in size to the Yangtse, several hundred miles further south, to which it runs roughly parallel. Its traditional name, one which it has richly earned, is 'Hundred Sorrows'. Those two words perhaps give some clue to the efforts focused in China on building a dam on the river; but to understand the urgency of the work and the ramifications of the whole scheme for harnessing the Yellow River, you have to know a little about its geographical and historical setting.

The known history of the river is as old as that of China itself, going back to the earliest records about 3000 years ago. During that span of time it is possible to count over 1500 floods, more or less serious, which have occurred in the middle and lower reaches. Individual floods have made up to 1,000,000 people homeless and inundated thousands of square miles of good

farmland, bringing epidemics and famine as their inevitable consequences. During that time the river has drastically changed its course at least nine times, sometimes flowing south of the Shantung Peninsula and sometimes, as at present, to the north to empty into the Yellow Sea.

The reasons for this history of calamities are geographic and climatic. Rising as an innocuous stream in the high plateau of Chinghai Province in the far west of China, the river rushes at great speed through a land of mountainous desert and loess soil whose surface is largely denuded of vegetation. The Spring melting of the snows of central Asia adds a sudden, and generally unpredictable, volume of water to a stream whose average gradient in this early section exceeds seven feet in each mile. The combination of gradient and untethered top-soil produces erosion on an enormous scale, and the



Excavations at the neolithic site of Miao Ti Ko produced treasures of Yangshao and Lungshan pottery. Assembly of sherds yielded some fine examples such as the terra-cotta Yangshao pot (opposite) with its lively black design. The Yangshao culture can be dated about 3000 B.C.



stream, as it turns into a river, easily carries down its heavy silt content. At one point in Honan, in the lower third of the course, the amount of silt swept past by the water exceeds 1,000,000 cubic yards a year. But long before this point is reached the Yellow River has become a menacing race whose potentialities can seldom be predicted. Debouching on the rice- and cotton-growing plains in eastern China, one of the world's most densely peopled areas, the impetus of the water slackens, the river widens out and the silt is deposited on the river-bed, which, as a result, rises. Each year for at least 2000 years the peasants of the riverine area have been painfully adding a few inches to the dykes in an effort to contain the Spring water; and on average every two years the Yellow River has won, pouring out from weak points over the defenceless land and people. Small wonder that Chinese folklore is filled with voracious river dragons requiring constant placation. Perhaps even the colour yellow came first to be associated with the power and often arbitrary extortions of the Emperors because of the analogous acts of the Yellow River.

Historically, the middle section of the river is the most important. Here amongst the mountains of compact yellow earth some of the earliest traces of Chinese civilization are to be found. The river, which has looped north at Lanchow in the west, turns again and flows due south to a point near Sian where it again bends, this time eastwards, to wind through this heart of historical China. In the Provinces of Shensi and Shansi, never far from the river, the neolithic Yangshao and Lungshan cultures of 4000-3000 B.C. evolved very rapidly into a civilization recognizably Chinese in character. In the same area the first historical Chinese Emperor, the Great Yü, *circa* 2100 B.C., ruled the Nine Provinces which were the China of his day, and is credited with the first attempts to control



the depredations of the Yellow River. Many later dynasties centred on this core of China, so that almost all the peculiarities of Chinese life were born or at least assimilated in the area: and it is here, spanning the narrow San Men Gorge, that the new dam now rises.

It is an astonishing country. Mountains entirely composed of yellow loess, whose origins are still a matter of dispute but which probably blew east from the Asian deserts, extend on every hand, entirely shaped and moulded by the combined work of erosion and

of man. For hundreds of miles there is no patch of level, soil, that is not an eloquent witness to the struggle between farmers and a climate which strips them land from under their feet. On my first visit in 1957 I was filled with a kind of reverential admiration for these creatures of rugged Chinese peasants, and for their modern descendants still battling on. The whole landscape is terraced up and down crumpling gradients of soil, each step of a field curbed with a mud wall, and—in early summer—lightly green with millet, band sown in hand-ploughed ground, later to be hand reaped as it has been since the days of the Great Yu.

The train journey from Peking to Chengchow, on the south bank of the Yellow River 100 miles east of the San Men area, does nothing to prepare you for the dramatic change of scene as the line moves upstream. The country is flat, rice-cultured and totally irrigated. The river bed is flat, very broad, pale yellow and apparently peaceful. The scene is typical China of the densely populated plains. But soon the train forges into a tormented sea of yellow hills. Dust-laden

eddies cover everything in sight, and the heat of the sun absorbed by the soil is given off in dry and sultry breaths. Rice gives way to millet and some tobacco.

In 1957 I arrived at a small wayside platform in the middle of nowhere, and I stayed in almost the first building of a projected new city which was to be the administrative capital and residential area of a future industrial development scheduled for completion simultaneously with the San Men Dam. We drove the twenty miles to the dam on a new metalled road cut and terraced through those hills of earth. Now and then glimpses of the river swam in the hot air of the distance upstream, again apparently harmless and placid. Villages which were mere rows of roomy caves cut into the earth-cliffs basked in the sun, their small aprons of pounded mud swarming with children, their doorways sentinelled with grandmothers sewing the typical Chinese peasant shoes whose soles are made from many layers of old cloth stitched together. In some there was a loom or two, identical in appearance with those in sculptured reliefs of

A cave village in the cliffs south of San Men Gorge. Its houses are excavated in a sheltered man-made terrace. The author found it hard to believe when he was in villages like this that the 20th century existed. But in fact the interiors of the caves are often snugly fitted out





Cave houses cut into the compact yellow soil in the midst of millet fields. The Yellow River meanders eastwards beyond, a mile or two upstream from the dam site. Hamlets of a dozen houses, whose pattern probably has not altered in a thousand years, shelter most of the population.





At the site of the dam while preliminary work was in progress. The old Yellow River transport-boats were pressed into service. Moored in the stream they formed convenient bases for the workers and housed instruments which were used to measure the rate of flow and silt content of the river. Alongside, drilling rigs were erected (*opposite*) to take samples of the rock sub-strata for the dam. (*Above*) A view downstream from one of the islands across which the dam is being built; another river-boat lies close to the north bank. The transport of building materials from one side of the river to the other at this early stage had to be done by hand over temporary bamboo bridges connecting the islands in the San Men Gorge. The man on the right wears a plaited bamboo safety helmet said to be superior to a tin helmet. He works on the drilling rigs, where there is danger from falling nuts and bolts



Land utilization, close to the site of the San Men Gorge Dam. Every yard of yellow earth from foreground to horizon has been terraced over the thousands of years since an agricultural community first settled in this cradle of Chinese civilization. Under its coating of millet and cotton lie some of the most primitive stages of recognizably Chinese life. But the road where the farm-hands are walking to work is new, as is the railway tunneled through the cheese-like soil and emerging at the dam site. Already after two years of modern forms of communication the whole life of the area is changing and the people are waking from their remote country dream

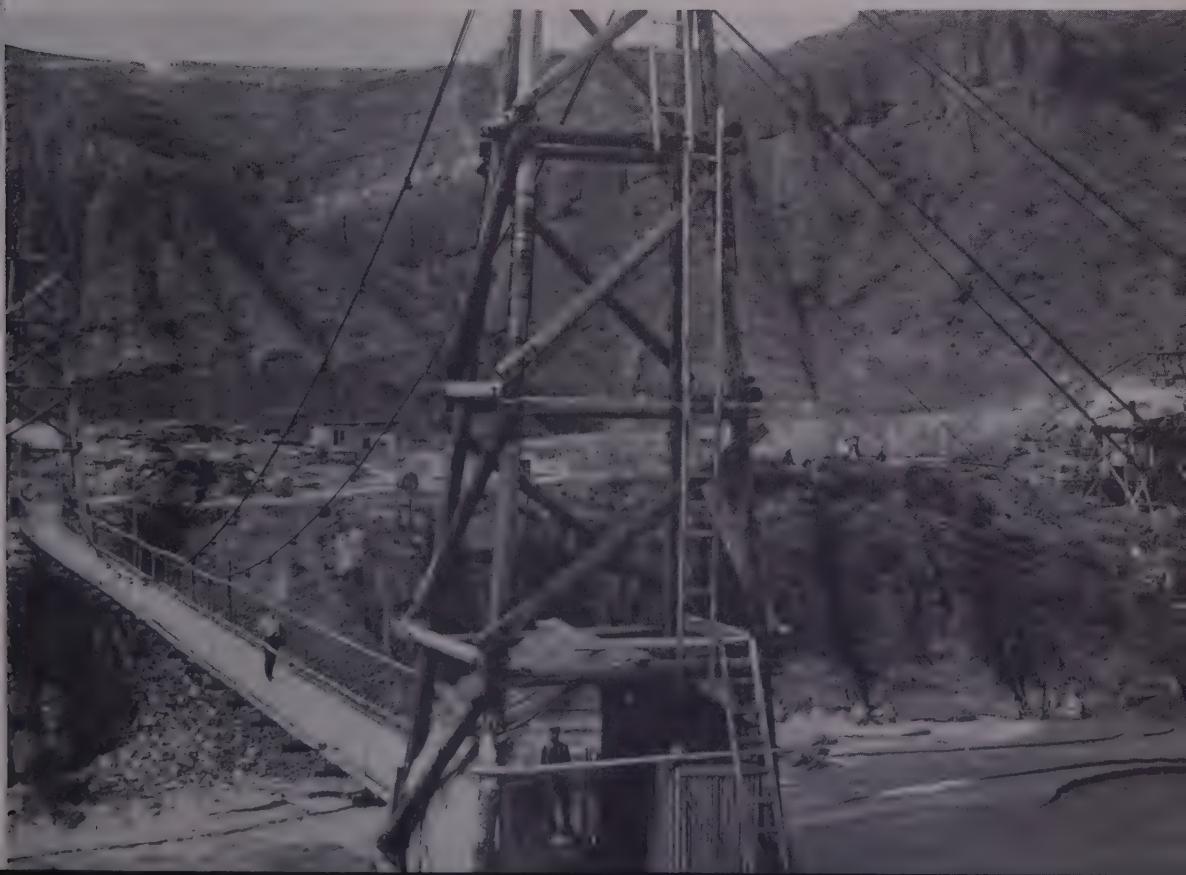
1000 years ago, and in every home a monster vacuum flask decorated with lurid chrysanthemums. The Chinese passion for hot water, either by itself or for making tea, was beginning to be assuaged with the first movements of modern technology into the region. In the more remote ravines there were many old people who avowed they had never seen a European before. They crowded round me, the children especially fascinated by the sight of hair on my forearms. Most Chinese have almost hairless skin.

Winding through those intensively cultivated hills we came suddenly to the gorge itself. The soil disappeared; bare rock like the exposed bones of the world thrust up and was cleft by the river in its deep channel. The Spring spate had abated and water level was low, but in the three gaps—San Men or Three Gates—formed by two islands in mid-gorge, the river tore past with a roar that reverberated up and down the flanking cliffs, a sound locally attributed to the voice of the indigenous dragon. There are many rivers called by this or that colour, but none so fully

justifies its name as the Yellow River. The water is a rich ochre, thick as nourishing soup.

Until forty years ago, when the first westward railway was built, the river was the main artery of transport in that direction. Through San Men Gorge every boat had to pass, hauled by its crew who disembarked and strained on the ropes as they stumbled along cat-walks cut into the faces of the cliffs. The deep ruts cut in the rock by those ropes over the centuries, and the occasional inscriptions ranging in time over 1000 years, tell their own story of the life of the Yellow River boatmen. The folklore connected with their hazardous work would make an absorbing study—there are many songs, stories, and even a boatmen's opera which they performed once a year, snatches of which an old boatman tried to sing for me by the river. On a height overlooking the gorge lie the ruins of a temple where many monks used to fatten on the cash offered by hopeful boatmen preparing to attempt the passage of the 'Gate of Man'. The names 'Gate of Gods' and 'Gate of Ghosts' give the local

One of the temporary suspension bridges spanning the gorge from south bank to the first island. Made largely of bamboo and steel cables, they were rough and ready in appearance but admirably adapted to the light traffic crossing at that time and to the pressures of high winds in winter



assessment of any attempt at a passage through either of the other two channels.

In 1957 work on the dam had newly begun. Blasting and drilling on the islands and cliffs had only just started to nibble at their celebrated contours. The near-fabulous quality of the place still cast its spell. But never was such activity seen there before, the cliffs swarming with men and the river dotted with tethered boats. The chasm was spanned by flimsy bridges island-hopping to the far side, and the roar of the water as I walked over was still not drowned by the sound of machines. Men—and some women—were carrying the traditional couple of little baskets of earth and rock swaying at the ends of

bamboo poles.

But there was a feeling of epic events in the air; a feeling that the whole symbol of ancient Chinese life was yielding at last to the will of ordinary Chinese people. Bigger dams have been built, and some, like the Kariba Dam, in more difficult places. But none perhaps in such a context of history as that at San Men. Certainly none will have so enormous an effect on the life of so many millions of people and on the economy of so vast an area.

To understand how the Yellow River was to be tamed and how it was proposed to utilize its power I spent several days with engineers and planning authorities at the site. The dam itself



The dam in November 1959. Portions of the islands can be seen beyond the coffer-dam which was built to allow work on the hydro-electric installation with its eight turbines. The river has been turned and now passes through the sluices of the spillway forming the northern third of the dam. The maximum height of the dam will be about that of the tops of the cranes. The engineers hoped that at least one turbine would be working by autumn 1960



is the biggest single project in an operation scheduled to take about two decades to complete, and its primary purpose is to control floods and produce hydro-electricity for the new industrial area. One of the planners told me: 'We are going to take the yellow out of the river.'

The dam will finally prevent floods downstream, but the problems of erosion are not thereby solved. The remainder of the scheme, consisting of forty-six dams of smaller size upstream and twenty-six reservoirs to be constructed on the tributaries, will do something to stem erosion. Huge tracts of hinterland and headwater country will be planted with trees and soil-retaining crops, and as far as possible every gully will be lined with stones to reduce the draining away of silt. Irrigation of about 20,000,000 acres never before watered will result from the whole scheme, including the 160-mile-long lake which will form behind the San Men Dam and stretch upstream toward Sian. This lake alone will contain 36,000,000,000 cubic yards of water when full. The power generated by the whole Yellow River scheme will be about 110,000,000,000 kilowatt-hours annually—25 per cent of that at present available in all China.

Dazed by these figures, I wandered in the mediaeval dream of some of the 970 villages and small towns which the lake at San Men will eventually inundate.

China is a place of contrasts. Only a mile or so from technicians and their calculations, and from the sight of emancipated young Chinese girls in pigtails squinting through theodolites, you find yourself in the depths of a scene which would have been absolutely familiar to the Emperor Yü. Here live the half million farmers and their families who will have to be resettled as the water covers their homes and ancestral lands. This is the human side of the epic.

Already in 1957, preparations for the multi-stage move were well forward. The whole scheme and its reasons had been carefully explained to the peasants, and they said they had been given plenty of time to think out its implications for them. Many of the local headmen had gone to the sites of their new villages 100 or more miles away, to get an idea of how it would be there. But there was hesitancy too, and older women told me they didn't know how they would keep warm in the winter in the new brick houses they had been told about. They would be without their *kang* (the mud-platform bed heated by the flue of the cooking fire).

On that first visit I spent some time with another group of technicians—the archaeologists. Not only villages of the present but also of history would soon be swamped in the lake. Neolithic villages of the 4th and 3rd millennia B.C. were yielding up their hoards of superb terracotta pots decorated with lively black patterns. And while I was there one of the first Chinese dragons, a black wily animal in relief on a pot of the neolithic Lungshan culture, came to light. Never far from the river, those very ancient sites were closely paralleled by burial places of the Chou Dynasty (1100-221 B.C.) whose princely tombs contained treasures of bronze, jade and pottery—even of lacquer whose typical red and black colours were little dimmed by the passage of time. The five war chariots of a Prince of Chou, which were driven with their horses into a pit and the horses slaughtered there, for the use of their royal master in after life, came to light not far from a new railway siding and were carefully roofed over as a permanent museum.

Two years later, in the early autumn of 1959, I came again to San Men, the train halting this time at a brand new station named San Men City. I was taken to the same house as before, a building now engulfed in a city of 200,000 people. Driving through the old villages I saw the new sophistication which had come—the radios, leather-soled shoes, little stalls selling paper-wrapped sweets.

Rounding the bluff we came again to the gorge. But now a wall of concrete towered 200 feet into the air, topped with cranes turning their bird-like heads 100 feet above everything else. The marvellous view of the gorge and the islands, the quality they had of epitomizing a chunk of Chinese history—all that had gone. The unruly dragon of the river flowed, strong but now perfectly obedient, through the sluices of the spillway, and the huge funnels that will lead water to the turbines were flashing with welding flames and resounding to pneumatic riveters within the safe confines of the coffer-dam. I walked down there on the bed of what had once been the Gate of Man, feeling like the tribes of Israel must have felt when the Red Sea parted for their transit. The boatmen's temple still looked down from the hill, its purpose now finally ended. In the late autumn of 1960 electricity will begin to flow from the first of the eight turbines. The great lake will begin to fill up, and the epic of San Men will be nearing the end of its first phase.

Popular Art in Poland

by

PEARL
BINDER



From the author

The bicycle comes to the Polish village. This harbinger of the Machine Age is here assimilated into popular art, as a theme in the traditional style of papercut appliqué from the Lowicz area

THE clue to Polish character is passionate patriotism allied to extreme individualism. It is the push and pull of these two forces on a poor and highly gifted peasantry which is responsible for the rich popular art of Poland. The Poles are a devout people, and the Roman Catholic Church has always provided a theme for their art and a permanent place for its display.

Today, as for centuries past, the popular art of Poland links the village church to the peasant cottage, whose gaily decorated interior and holy corner resemble a facet of the brightly painted church itself. The coming of a Communist regime apparently has not undermined the role of the church nor the traditional arts of the village, but we have yet to see what effect the arrival of the first tractor will have. Machinery can be more disintegrating than politics.

The authorities are acutely aware of the threat to their national folk art by the industrialism they must have in order to raise the standard of

living. More understandingly than in any other country I know, they are doing what can be done not merely to protect it but to give it a new lease of life. This is a most delicate problem, for patronage can be as lethal as neglect, and so far it has defeated every other country in process of industrialization, where the people have gained financially and popular art has deteriorated.

Intelligent, gay, resilient, astonishingly dexterous, Polish peasants have a genius for making something out of nothing, and something very good indeed out of very little. They use what they have at hand, or can easily obtain in their everyday working lives, to create their votive offerings to God and the saints, and to beautify their cottages.

Everyone who has visited Polish villages is struck by the dignity and harmonious proportions of the cottages. The simplest are divided into two rooms with a wide passage between, the room on the left being for the family, the



all three photographs by courtesy of the Polish Cultural Institute



The customs, symbols and designs of long ago are still a part of life in country districts of Poland, in particular for the older people. (Above) Christmas in the Lowicz countryside. It is on Christmas Eve, 'Wigilia', that the tree is lit, presents are given, and straw is spread on the table. With the coming of spring (left), the villagers of Opole Province, in the south, walk about with decorated boughs. (Opposite) The people of the Lowicz villages adorn the road-side crosses for Easter, beside which they will gather, to sing sacred songs



passage for the agricultural tools, and the right-hand room the byre for the cow. Fodder is kept in the loft. In such a simple setting as this, masterpieces of spontaneous art are painted on plaster walls or sturdily carved into eaves and roof-beams.

Wood is of first importance. The Poles are superb carvers. Every village church has its home-made Madonnas, Christ in meditation (a favourite Polish theme), St John, St Francis and the Flight into Egypt. In wayside shrines the painted wooden Madonna is likely to be dressed in real clothes like a doll and handsomely jewelled, and often the shrine is glassed-in like a small shop window. In the High Tatras almost everything the household uses is made of wood, including carved drinking-mugs with two or three holes in the handle for the fingers, elaborately carved salt-boxes and spoon-racks, racks for plates, carved tools and implements, and carved chairs and benches.

Paper is a favourite medium and much loving craftsmanship is lavished on this ephemeral substance. Coloured paper is snipped into intricate designs of cocks and hens, trees of life and radiating suns (more magical than orthodox, like the star-shaped Christmas lanterns). Some districts build up layers and patterns of appliquéd paper roosters. All such paper-cutting is traditionally performed with primitive sheep-shears.

These little pictures are stuck to the plaster walls with a paste made from potato-water, to form a frieze or all-over pattern. Coloured paper is also used to make fancy flower-wreaths and gorgeous bouquets, especially as an offering to the effigy of the Madonna in the holy corner. There is a lot of painting on paper, with bright earth colours and a home-made paintbrush (from a cow's tail often enough), and shreds of coloured paper are used with great effect in the construction of tinsel wedding-crowns and straw chandeliers.

Glass-paintings are a Polish speciality. Varying from a couple of inches across to the largest ones, about eighteen inches by two feet, they are painted in earth colours, enlivened by scratched lines which are sometimes gilded at the back. The older glass-pictures (recognized by the unevenly surfaced texture of the glass) are only concerned with religious themes, but more recent ones often depict romantic patriotic scenes or episodes from the life of the popular mountain bandit Janosik, especially romantic versions of his various lady loves. Whichever one is

depicted, she is traditionally painted in early 19th-century dress, and is clearly meant to look like a lady of means, not a peasant.

Confectionery and pastry for feast-days are popular media for artistic expression, little dogs, foxes, mounted riders being moulded in the round, glazed and patterned with a slip made of caramel sugar and baked hard. Gingerbread moulds are to be found all over Poland, cut into elaborate likenesses of swaddled infants, kings and queens, flowers, animals and holy scenes. There are also holy wafers pressed from incised iron moulds, and the famous wooden sheep-milk cheese-moulds of the Tatras (*redykalki*) cut to form fancy hearts, roosters, deer and sheep.

Still in existence are the bee-hives, five to six feet high, carved in wood and painted in the image of a bear or a saint, a Wandering Jew or a bishop, to secure protection and a better harvest of honey. One fine example takes the form of the owner himself, dressed in Podhale costume, every detail correctly carved to the last button. These magical effigies date from the third quarter to the end of the 19th century.

There is excellent village pottery to be found in every province in Poland, glazed in green, cream or brown. Gdansk and Lodz produce joined twin jars with a carrying handle, intended for taking soup and potatoes out to the farmer at work in the fields. Comic figures are still made in the form of double-handled jugs, the hat serving as lid, and one extremely beautiful large heavy wine-decanter in dark glaze is cast in the form of a bull, the tail-handle being raised so that the wine may pour through the mouth (Krakow Ethnological Museum). It is hard to believe that this noble ceramic was fired late in the 19th century.

The mobile chandeliers ('spiders') which dangle from the ceilings of so many Polish cottages are contrived from straw strands, decorated with paper flowers, Christmas-tree baubles, painted egg-shells and dyed hen-feathers, often festooned with strings of dried peas, a pastoral version of the grand lustred chandeliers of great mansions. Every peasant makes her own. I have never seen two alike, just as no two cottages are decorated in the same way. In one village near Warsaw all the cottages are painted deep blue, but the details of decoration are entirely individual. The effect is enchanting, a unity which embraces variety.

It is this variety which makes the popular arts

In this village in the area of Lowicz all the cottages are painted blue; but they never look the same, as their shutters are decorated with highly individual patterns. Outside one of them stands its owner, a young widow who made all the decorations for it, holding the paper bouquet which stands before her statue of the Madonna

Kodachrome

Rit





Samples of Polish peasant craftsmanship today. The rug and the wooden horse are from the High Tatras. The spiced-bread hearts decorated with sugar are sold at the Feast of the Assumption. Between them is a child's festival rosary, made of biscuits and coloured paper. The dolls are dressed in regional costume; the cylindrical box ornamented in burnt patterns was made in the Krakow region; animals made of glazed biscuit for feast days are from the Warsaw region. To their right stands a Christmas crib of painted wood, against a background of mediaeval spires



Ektachrome

Contemporary examples of popular art in Poland. The poster at the back advertises a dance and song company. The wall-hanging on the right, in the Lowicz style, is a product of village industry. The textiles were printed by the Polish Council for Industrial Design, some designed by students of the Kenar school at Zakopane. The bird at the bottom is a papercut. The glass picture is from the Tatras, the jug from the country round Zakopane. Beside it is a model of the kind of double pot in which soup and potatoes are taken out to the men working in the fields

J. Freeman



by Rita Ling

Kodachrome

Polish peasant dress of Zakopane in the High Tatras. The woman's is a summer festival dress with sun-symbols embroidered on the velvet bodice. The man's coat, trousers and hat are of thick felt, all home-made. Round his hat are cowrie shells, which possibly reflect the influence of earlier wars against the Turks. He is a shepherd and a skilled leather-worker and silversmith

of Poland so refreshing. Not only are regional differences very marked, but there are differences between one village of a district and the next. The peasants delight in decorating their cottages differently from their neighbour's, and they do not wear exactly the same costume. Individual fancy is appreciated.

Inside a cottage, every papercut, every bauble, every piece of needlework and embroidery may well be the work of the owner's own hands, and all the designs original; the only bought object the tawdry plaster Madonna on the table in the holy corner. If there is also the wireless, a bicycle, electric light, yet the floor is still of beaten earth, but gorgeously patterned in sand-flowers, strewn afresh daily into different shapes.

How long will such artistic creativeness continue in the Polish villages? What will mass-produced industrial plenty, when it comes, do to these arts? Professor Roman Reinfuss (the distinguished ethnologist of the Jagellonian University of Krakow, with whom I had the good fortune to spend a day of fieldwork in some of the remoter and poorest villages) confesses himself pessimistic. He fears the towns will take to ready-made trash, and the villages will inevitably copy the towns. Other authorities, including women social workers in the villages, are more hopeful. They believe that the themes of Polish popular art will change as conditions change in the villages, but that the arts themselves will continue.

Some of the former fine white embroidery is no longer made, and the secrets of fabrication of much beautiful needlework are now known only to a few illiterate old women in the villages. However, there is no lack of encouragement, and they will teach what they know. Meanwhile teams of trained ethnologists, architects, photographers, costume historians, artists and surveyors are systematically working through the whole of the Polish countryside, carefully recording every detail so that the record shall be complete. And this in itself, I believe, must do something to reassure the peasant of the importance of his traditional arts.

CULTURAL INFLUENCES

Her harsh geographical situation, an unprotected gateway between East and West, has been both a disaster and a benefit to Poland. Her history is a tragic one. For centuries her lot has been invasion, oppression, dismemberment and unrelenting struggle for survival and rebirth,

culminating in the horrors of the last war and cruel occupation, which cost Poland many of her best citizens and laid waste her fine cities and lovely countryside. Today there is still a desperate shortage of livestock, and wood is scarce and costly in regions recently famous for their valuable forests.

During the centuries Poland has been invaded not only by Christian countries but also by Turks and Tartars. (That splendid historical Russian ballet *The Fountain of Bakhchisarai* treats this theme in realistic detail.) The interrupted trumpet call sounded hourly from the unequal towers of the mediaeval church of St Mary commemorates the last such Tartar attack on Krakow. Flourishing a knout, Lajkonik, the hobbyhorse Oriental, gallops through the old streets of Krakow every year during the summer festival of Juvenalia, that the threat from Islam be not forgotten. And all over Poland the children munch sugar Lajkoniks.

As with other oppressed countries, Polish villages developed their local costumes as a defiant expression of identity, and most of them date from the 19th century, when Poland had no official existence at all but was parcelled out between Austria, Russia and Prussia.

The positive aspect of Poland's unfortunate geographical situation has been her unique opportunity for absorbing and making her own the many cultural influences flowing in from every point of the compass. In this respect it must be remembered that many foreigners entered Poland not as enemies but as peaceful traders. Krakow was one of the great market towns of the world.

This fusion of East and West has been of the greatest value to the popular arts of Poland, constantly supplying them with fresh ideas and techniques.

Poland has a Latin alphabet. Her church is Roman. Yet she looks east as well as west. Many Poles are tall and butter-blond, but many are short and olive-skinned. It is not unusual to see blond Poles with distinctly pointed oriental eyes. The Jews too have added much to Polish culture, and wandering bands of gypsies have always been part of the Polish scene.

It is fascinating to try to pick out oriental items in the rich popular costumes of Poland, so completely have they now become native to Poland. But it seems certain that the tinselled and flowered brocades, the caftan, the finely embroidered tulle head-scarfs, the turned-up



By courtesy of the Polish Cultural Institute

Holy Virgin with angels. A contemporary peasant wood-carving from the High Tatras

toes and the swathed male sash have an Eastern origin. To me it seems that the extreme and subtle elegance in dressing of Polish women (no matter how poor) derives from the Orient. Certainly, many economic processes and habits of thought in Poland are Eastern. There is, for instance, a particular peasant method of permanently pleating woollen fabric by encasing it in dough and baking it in a very hot oven (the 'hot bread' method). This is done in Poland exactly as it is done in far-off Tadzhikistan.

Is there, I am tempted to speculate, no connection between the papercuts of Poland and the papercuts of China? And might not the Polish genius for pure mathematics have some distant link with Arab science, once so advanced in numbers?

I find it exciting that the wonderful tinsel-paper Nativity puppet theatres (*szopki*), traditionally

created and carried round the city by unemployed bricklayers in wintertime, should be so markedly oriental in character, with their glittering domes and minarets, almost invariably surmounted, not by a cross, but by a crescent and star. It is as though oriental symbolism has become part of the Polish subconscious mind.

There are other influences to be seen in Polish popular art which derive neither from Christianity nor the Muslim faith, but are essentially pagan, and these are some of the most interesting. The ceremony of killing Winter is performed in many variants in different parts of Poland, especially the High Tatras where the winters are long and bitter, and where the all-important sun is carved on every door and embroidered on every bodice.

The goat-head appears in most of the mumming parties, in which only young boys take

A village embroidery circle. Members of a craftsmen's cooperative in the Kurpie district, to the north-east of Warsaw, carry on as a living tradition the decorative work for which Kurpie is famous. Above their heads hang sheep-clippers with which papercuts are traditionally made

By courtesy of the Polish Cultural Institute





part. On Easter Monday, boys and girls chase each other and throw water on each other to hasten the fertility of the fields. And there are many ceremonies directly employing witchcraft to punish a faithless lover or secure a desired one. All these flourish side by side with orthodox Roman Catholic practices.

I was present at a christening ceremony in the parish church of Zakopane, where the godfather wore his traditional embroidered mountain dress, the young parents were dressed up in stiff European city clothes, and the baby, gorgeously bedecked in ribbons and shiny satin, was presented to the priest on a cushion of lace and silk completely festooned in fresh fir-tree branches.

The great religious processions, for which Poland has always been famous, today display Marxist and pagan symbols amongst Christian ones.

PEASANT DRESS

It is in their gala dress, perhaps, that Polish peasants show all their skill and love for brilliant colour. Such was the competition between the belles to be the best-dressed that in some of the richer villages fashions of detail changed four times a year. Then there were special darker versions of the costume to be worn during Lent, which occasioned further opportunities for display. There was one dress for working in; another for Sundays and feast days. And the gala dress could not be too grand.

Though each district has its specialities there has always been plenty of choice. The fashion has been not to conform but to vie. Cieszyn is famous for its gold thread and sequin embroidery on black velvet, Rzeszow for fine white embroidery, the Wilanow region for black embroidery on white, Lowicz for its brilliantly striped woollen skirts, Lublin for its woven embroidery, Podhale for its gay woollen embroidery on white felt (a male fashion and done by men). In the district of Zywiec the gala dress of the girls is entirely covered with finely embroidered tulle lace. And so on.

Polish village costumes developed during that part of the 19th century when England, so important industrially, was losing her own colours and sartorial gaiety. Polish peasants took over the dull prestige-conferring frock-coat and

'The Village Orchestra', woodcut design by a student of the Kenar School at Zakopane in the High Tatras. Here the local tradition of wood-carving is kept alive

made something splendid from it by vivid buttons and elaborate braiding. Even the unlikely black top hat was made merry by a bouquet of bright flowers. Black high-laced boots date some village costumes fairly closely, for these were not worn elsewhere before the 1870s and 1880s. But the Polish girls thought of threading them with gaily coloured laces, thus giving them an entirely new interest.

Some mention must be made of the marriage crowns of the Lowicz district. Each bride designs and makes her own, of trembling wires supporting a fountain of artificial flowers, birds, tinsel ornaments and chicken feathers dyed to a highly individual fancy, towering two feet or more, quivering above a closely fitting cap of gold sequins and tinsel, from which stream six or more brightly brocaded ribbons. The bridegroom must be tall indeed who is not dwarfed by such a head-dress.

Of course these wonderful clothes do not exist in isolation. They are part of a very rich cultural heritage of customs, songs and dances in which all join and anyone may contribute new items. In Chocholow, for example, the village carpenter, who plays the fiddle in the local band, makes his own fiddle. It is exactly the small elongated shape and size of the dancing-master fiddles of the 18th century in Europe. Yet nothing is fossilized and stagnant. The Scottish song 'My bonnie lies over the ocean', brought back to Poland by Polish soldiers returning from wartime Scottish billets, has already entered Polish village repertoire and has become a brisk polka.

THE FUTURE OF THE POPULAR ARTS IN POLAND

How to encourage popular art in a period of rapid mechanization is a problem the Polish Government is tackling in various ways. First of all by careful surveys, excellent folk-museums, good publications and by encouraging the children to make live museums, and so on, they are making sure that nothing is overlooked. The church is a willing aid in encouraging the wearing of gala dress for marriages and feast-days and in the processions of saints' days. Teachers play an important role in imparting to their pupils what might otherwise decline or become slipshod. The headmaster of the fine village school of Chocholow (an alpinist in his sixties) sees no contradiction

Polish posters express a current form of popular art. The cat advertises a festival of films for children; the angel-airman warns pilots to remember their oxygen



All three illustrations from the auth



between the teaching of modern science in his school and handing down to the children witch-haunted games and fables, old dances and songs, and exact traditional dress.

Poland is poor. Fine handwork takes time. If the peasants are commissioned they will continue to make their beautiful things, but things made only in order to be sold quickly lose their vitality, like a fish out of water. This is well understood in Poland where the artistic instinct is so deeply rooted and widely spread. Competitions amongst the villages are now held regularly and these are eagerly taken up and produce good results.

But not all peasants are good artists either. Amongst the unsophisticated there are layers of quality just as in the sophisticated world. Here a successful organization called 'Cepelia' plays its part. This organization buys from the villages and sells to the public in the cities and overseas the best products of popular art. It sets a very high standard, and indeed has many artists amongst its organizers.

Popular art, once it dies, can never be revived without falsity, but it is possible to give it the right sort of blood transfusion when it seems on the decline, and bring it together with a new public in a new age. This has been accomplished with outstanding success by two dance companies, 'Mazowsze' and 'Slask'. The performers are all villagers: singers, dancers, musicians. They give authentic peasant performances, but, and this is the essential condition, they are arranged for the stage by expert artists and technicians, steeped in Polish culture. All the details of the magnificent dresses, for instance, are taken from the real dresses in the Ethnological Museums, but arranged for the stage. There is absolutely no pandering to cheap commercial glamour. The enterprise is as good as they can possibly make it, which means very good indeed. And one unexpected result is that when these companies tour the countryside they give a new pride to the peasants and set a standard in technical accomplishment which is already having a good effect. Another aspect of Polish interest in dress is the excellent Haute Couture sponsored by the state, but largely in the gifted hands of a few leading Polish dress-designers. Without the slightest trace of artiness they have found interesting ways of using peasant materials and ideas for modern dress.

The striking connection between primitive art and modern art is very obvious in Poland, where professional and peasant artists are on the best of terms, and it can be said that the peasant artists often have the stronger effect. Today, in the ateliers which make rugs and tapestries, professional designers work together with the peasants in great harmony. Polish posters too, which are the best and liveliest in the world, are a true popular Polish art in the Poland of today.

In Zakopane one of the most interesting art schools in the world is successfully doing this essential and tricky job of bridging the gap between what might be called instinctive art and conscious art. The school is not only devoted to art but also to the general higher education of the art students. A talented sculptor, Anton Kenar, who died recently, started it in 1938 for the children of the High Tatras where the tradition of wood carving is so strong. Kenar's principle (and one that could well be followed in other arts and other countries at this present stage of impasse) is that sincerity is everything. The children learn the technique of their craft as an exercise, and then work out for themselves their own means of expression by solving increasingly complicated problems. This throws the onus back onto the child, and makes him produce what is in him to give. The results are highly individual, and with a spiritual truth which goes far deeper than ordinary realism.

Some of the children's woodcuts are being used as fabric designs by the I.W.P. (Instytut Wzornictwa Przemyslowego), the Polish Council for Industrial Design, whose dynamic director Wanda Telekowska, herself a gifted artist, has set herself the task of bringing both peasant and professional artists together to design the best prototypes for mass production. So far, Poland is so short of material abundance that I.W.P. can only go slowly. Nevertheless the conception is right and the spirit of the 700 or so artists and workmen in the organization is enthusiastic and stimulating, despite all kinds of difficulties. If they succeed (and in the sphere of children's clothes a start has already been made) Professor Reinfuss's fears of a flood of ready-made trash need never materialize. The flood would be of excellently designed good-quality objects for daily use in which the contribution made by peasants would take its place.



They Fish Australian Seas

by JOHN WARHAM

AUSTRALIA has nearly twice the number of resident sea-birds as Britain. This is not merely because her coastline is so much longer—over 12,000 miles as compared with Great Britain's 4650—but also because her shores stretch up through 30 degrees of latitude, running from the cool waters of the Southern Ocean to the tepid waters of the tropics. A very wide range of feeding opportunities and nesting habitats is thus available, a range catering for the tastes of a correspondingly diverse assortment of oceanic birds.

Food seems to be the major factor in controlling the numbers and distribution of birds both on land and at sea. The waters around Australia are not particularly rich in the plant life that in the long run supports the fish, squids and crustaceans eaten by sea-birds, and their actual density per mile of coast seems to be a good deal lower than obtains along the shores of

Britain and the European seaboard generally. Nevertheless, more birds of more kinds are to be seen here than in the fish-rich northern waters.

Sea-birds are more mobile than land-birds. They can generally refuel their muscle engines by feeding as they travel, whereas many land-birds are restricted by the lack of the special foods to which they have been adapted, once they leave their chosen areas. A gannet has more freedom of movement than a bower-bird. Although there are zones in the sea they are larger and their boundaries are generally less sharply defined than those on land; so that a gannet can range far greater distances before it runs out of suitable food than can a bower-bird tied down to a diet of rain-forest berries. The birds of Australian seas are thus a far more cosmopolitan collection than those of her vast inland. This characteristic of the birds of the Australian coast and continental shelf is reflected

All photographs by the author

in the fact that there are only three sea-birds unique to Australia—though several breed elsewhere only in New Zealand—whereas many of her land-birds are found nowhere else.

The composition of the sea-bird community found around Britain and the adjacent North Atlantic differs considerably from that round Australia. The breeding species are compared in the accompanying table which shows how Australia's superiority in species is primarily in three bird groups: the petrels, terns and gannets. In British waters gulls and skuas comprise the largest groups. Britain lacks both penguins, cool-water birds of the sub-Antarctic, and the warm-water tropic- and frigate-birds. On the other hand, the important northern groups of auks are entirely absent from southern waters.

Number of species in main groups of breeding sea-birds

	Britain	Australia
Petrels and shearwaters	4	11
Gannets and cormorants	3	8
Gulls and skuas	8	2
Terns	5	15
Auks	4	—
Penguins	—	1
Frigate- and tropic-birds	—	2

To some extent the penguins of the south



occupy a special position similar to that of the auks in the north. Although the former are flightless and the latter fly well, both get their food by diving under water. There is a general similarity of black-and-white colour patterns and upright postures which continue to suggest affinities, but these are imagined rather than real: the resemblances are adaptations acquired independently to fit both groups for a similar mode of life and they do not reflect close relationships or a common ancestry.

Around the coast of Britain the auks form picturesque colonies well known for their cliff-nesting habitats. Rather strangely, virtually no sea-birds in Australia have exploited this niche. And such a niche does exist; for hundreds of miles the shores of the Great Australian Bight are fringed with precipitous ledge-furnished cliffs where an auk would surely feel at home. There are similar stretches of coastline between Geraldton and Carnarvon on the shores of the Indian Ocean and elsewhere, but all are virtually deserted by sea-birds. Only an occasional osprey, sea-eagle and many kestrels breed there; never gull or tern. Even the sea-dwelling cormorants choose lower rock-shelves on islands or nest among boulders close to the water, never in such lofty situations. Only around Tasmania are there albatrosses and gannet rookeries on isolated stacks reminiscent of Ailsa Craig, Rockall and the great stacks of St Kilda.

There is no evidence that auks have ever had representatives in Australia; the group appears to have arisen and evolved in the north. But the family of petrels, which includes shearwaters, fulmars and albatrosses, is predominantly a southern one and apparently started in the southern oceans, which explains the preponderance of this family on the Austral sea-bird list. On the other hand terns are thought to have evolved in the tropics, where they predominate today. With nearly half her coastline lying north of the Tropic of Capricorn, Australia has a large number of species of the tern family.

The continent lies too far north to attract many penguins. Four or five kinds turn up on her southern beaches from their breeding



Little penguins (*Eudyptula minor*), the only species of penguin resident in Australia. The downy chick follows its parent back to their nesting burrow, whining in the hope of getting more food. They are sedentary and breed in the southern summer. Flipper bands are used to mark them

grounds far to the south (Macquarie and Heard Islands support well over a million penguins of four kinds and are politically part of Australia) but only one species is resident, the Little penguin. Nor is this a very typical penguin, for it is small, rather shy, a burrower and ventures ashore only at night.

Some members of the Australian sea-bird community breed both there and in Britain. The cormorant is one of these. In Australia it is known as the Black cormorant to distinguish it from four other coastal or swamp-dwelling cormorants and is perhaps the least common member of its family. Among the terns two species breed in both countries: the Little tern, a local breeder on British beaches, also nests around the coastline of eastern Australia, while the Roseate tern, one of Britain's rarer kinds, is commonly found nesting on tropical islands, sometimes in considerable numbers.

There are others whose British and Australian representatives are very closely related, like Great Black-backed and Pacific gulls. Even closer are the northern and Australian gannets which nowadays are generally regarded as members of one 'super-species'. In appearance they are identical except that the northern bird has a pure white tail whereas that of the southern bird is black-tipped. In behaviour, voice, displays, nesting-habits the two seem alike, but whereas the gannets of Grassholm, Bass Rock and other northern sites take four years to acquire adult plumage, the Australian representatives can do this in only half the time. Gannets are well represented in Australia since, in addition to the cold-water *Sula serrator*, three others fish her tropical seas.

No Australian-born sea-birds are known to have reached Britain and none seems likely to do so, but some remarkable flights have been



Some of our own North Atlantic seabirds have relatives in Australia. (Left) This large and powerful gull, the Pacific gull (*Larus pacificus*), is restricted to southern Australia. It resembles the Black-backed gull, but it has a heavier bill and black barrings across the tail. Gannets (below) of south Australia (*Sula serrator*): all that is left of a flourishing colony on Cat Island in Bass Strait, slaughtered in recent years by fishermen wanting easy bait. (Opposite) Crested terns (*Sterna bergii*) and the red-billed Silver gulls (*Larus novaehollandiae*), disturbed near Rottnest, off Western Australia, where many are ringed to study their dispersal after breeding. The Silver gull is the familiar sea-gull of Australian coasts and harbours





recorded in recent years. Thus an Arctic tern, a species breeding in Scotland and elsewhere around the Arctic Circle, was found at Fremantle, Western Australia, weak but alive, on May 16, 1956. Ringed as a chick by the Russians on July 5 the previous year on the White Sea some 125 miles south of Murmansk, its flight is the longest recorded for any marked bird. The tern evidently crossed the North Sea, flew down the African coast and around the Cape to make its landfall in Australia after traversing the Indian Ocean, and all this in its first year of life. Fremantle seems to have a fascination for these long-distance travellers, for a Common tern ringed in Sweden as a nestling on July 9, 1955, got there by January 7, 1956, having covered at least 13,000 miles in six months.

When breeding, Australian sea-birds show a marked preference for islands. Few colonial species nest on mainland beaches or on dunes, as Sandwich and other terns do in Britain and Holland; any that did so would fall easy prey to the introduced fox now so common south of the tropics. The choice of islands varies with the species: the petrels, which are mostly burrowers, need places with an adequate soil-cover, the

tropical gannets favour bare-topped islets, cormorants use eroded rocks not far from high-water mark, and albatrosses select steep slopes where strong winds facilitate their departure.

Australian bird islands fall into two main types. Many, composed of igneous or sedimentary rocks, are just chunks of the mainland that have become sea-girt through rising sea-level or through subsidence. In the tropics these are often of sandstone, on the south-west coast of recent and much-eroded limestone, and off the south and east coasts of granitic and basaltic materials often of great age. Such islands attract few sea-birds in the tropics, but in the south, particularly Tasmania, they may be homes for millions of birds of the burrowing kind. Small islands are generally preferred, and it has been suggested that a view of the encircling sea commends a place to sea-birds and makes them partial to the smaller islands. In the south these continental-type islands weather down to form a rich soil. With a comparatively high rainfall this supports a thick vegetation, preventing erosion and making conditions excellent for burrowing. In the tropics, however, the vegetation of continental islands is sparse, the soil shallow or



(Above) An island in the Barrier Reef. The coral sand capping runs along the fringing reef, which is crowned by mangroves. Birds that nest here may fish the lagoon or fly further afield. (Below) Common noddies (*Anous stolidus*), a bird of the tropical seas. They nest in colonies, or roost ashore on sand cays, crowding together in tight masses, black carpets on the pale sand





(Above) Lesser frigate-bird (*Fregata ariel*) on the left, and Red-footed booby (*Sula sula*). Both breed on tropical cays. The booby has several colour phases which probably relate to age. (Below) Eroded slabs of dead coral form the shore of many tropical islets. Fairy and Bridled terns lay here, their eggs matching the patchy background; other terns lay higher up in grass





The Australian pelican (*Pelecanus conspicillatus*) is a timid bird, nesting in the most remote places. It only tends its chick for the first weeks. The chicks then huddle together in crèches, but are still fed by their parents, on mullet and other shallow-water fish

non-existent and liable to be blown away by the hot wind, so that burrowing species have no opportunity of nesting.

The second type of island important for breeding sea-birds is the sand cay. Cays are aggregations of coral sand washed onto submerged coral platforms and they occur mainly in the tropics. In the zone of the trade winds they usually lie on the north-west side of extensive coral reefs whose encircling arms enclose large calm lagoons. Such cays mostly wear a sparse coat of low vegetation and are highly favoured by terns and boobies as nesting and resting grounds. There are hundreds of these islets off the northern coasts of Australia and along the

Great Barrier Reef, many no more than four or five acres in area and few any larger than fifteen acres.

The beaches of these islands may be a jumble of coral debris piled high by the waves, debris that clatters like broken crockery as one scrambles ashore from a boat. Beyond the beach will be fine coral sand held together with sparse grass and low herbage. Fringing the shoreline and running out along the reef there is often a lush strip of mangrove scrub. Other cays, particularly those well off shore like the ones out from the North Queensland coast on the fringes of the Coral Sea, have no mangroves, and a sandy shoreline rises to a coastal ridge of grass-clad dunes and may then level out to a central depression. In the grass nest the terns—Sooty terns being by far the most numerous species—and on top of the low bushes Noddy terns and Red-footed boobies build seaweed platforms on which to lay their eggs, while on a few such islands frigate-birds also make stick nests on the low herbage. The mangrove thickets of the inner islets may also shelter the homes of two tree-nesting species of Noddies which are again made out of seaweed plastered across forks in the branches.

Most sand cays lie in the monsoon belt and the summer rains may partially dissolve some of the sand, re-forming it into a sort of coral limestone. This subsequently becomes eroded into low cliffs a few feet high in whose crevices Red-tailed tropic-birds find the shade and coolness they like for nesting. The gannets of tropical seas, the boobies, manage very well without shade and lay their eggs in the open ground on top of the cays.

Despite the ameliorating effects of the surrounding sea the cays are hot. The newly born chicks—and the eggs—must be sheltered from the high sun if they are not to be cooked to death, and later, when the nestlings are large enough to be left alone while the adults are fishing, their temperature-regulating mechanisms are worked

to capacity. The chicks of boobies, pelicans and cormorants pant continuously during the day's heat. By evaporating moisture from their large gular pouches they reduce their body temperatures, just as a porous porcelain dish evaporating water keeps the butter it holds from running to oil. Some chicks may crawl to the scanty shade of the surrounding vegetation, while young boobies cock their tails to the sun and lower their heads, keeping these and their necks within the shadow cast by their own backsides!

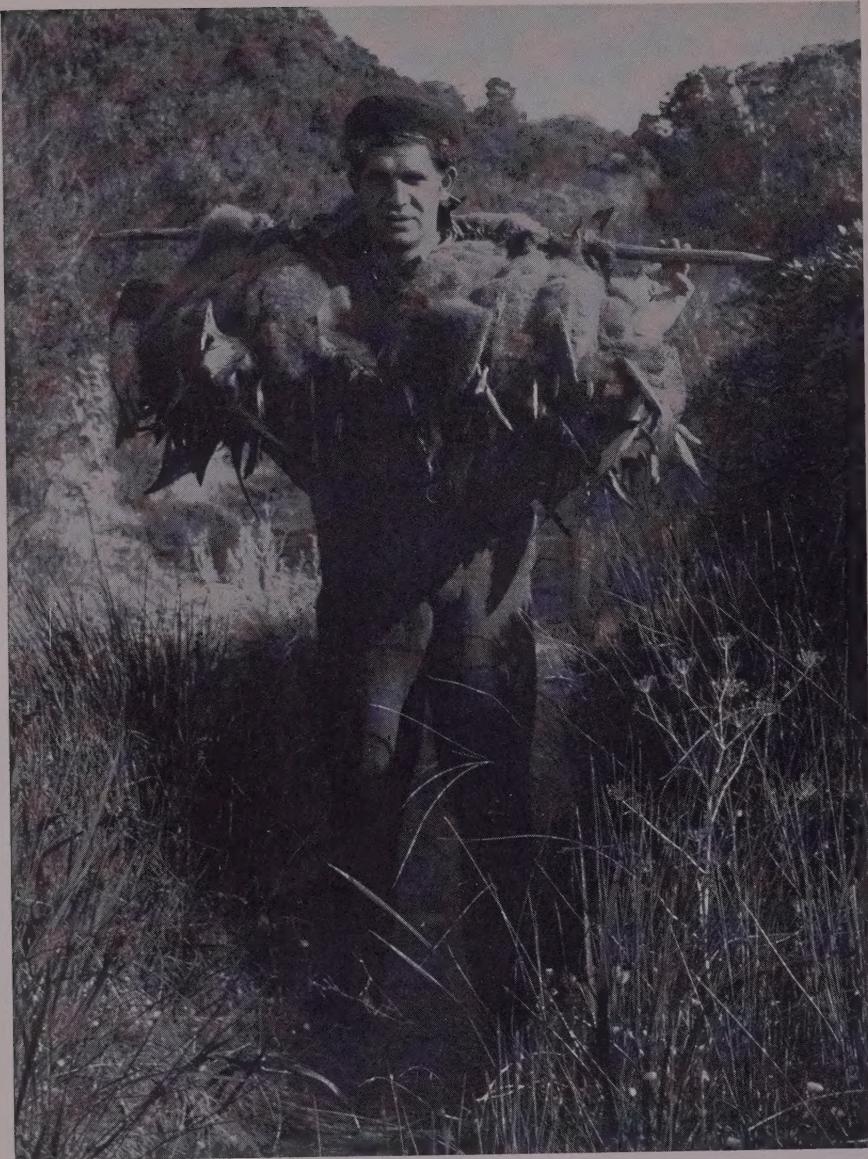
In the south high temperatures are less of a hazard. Surface nesters like gulls and terns also pant on hot days, but heavy rainstorms and cold nights are apparently more dangerous during the breeding season. Burrowing petrels may get flooded out; some of these nest at the height of the southern winter when conditions are predominantly stormy. Since their chicks are deserted by day when they are only three days

old, at this stage of their lives they must rely on the shelter and warmth provided by the burrow and on their own protective downy coats. They look like fluffy powder-puffs as they sleep in their subterranean retreats, their eyes and beaks quite lost amidst the wealth of insulating down that they wear.

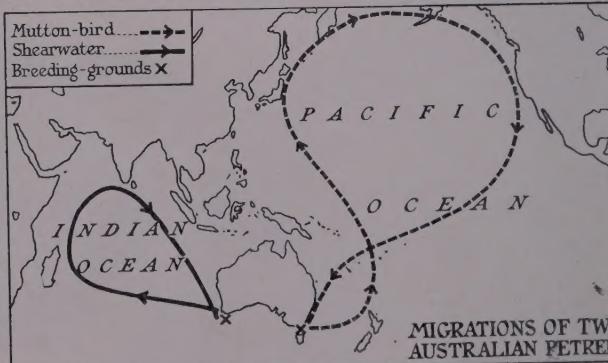
Australia has only one pelican. This is a large black-and-white bird with the massive pouch and aldermanic carriage of pelicans everywhere. Although many nest inland on islets in flooded lakes, the more permanent nesting-stations are on islands where the birds are not dependent on fortuitous rains for correct breeding conditions, where the encircling sea ensures freedom from molestation by carnivores and the shallows provide the shoal-fish on which they and their young are fed. Most of the known breeding-stations of the pelicans are in the tropics, and the chicks, naked as plucked turkeys in their first

The Red-tailed tropic-bird (*Phaethon rubricaudus*), seen nesting with its young on Pelsart Island in the Indian Ocean. It is rather a rare bird in Australian seas. The chicks lack the pink body plumage and long tail-streamers of the old birds, but have black-and-white patterning





A load of mutton-bird squabs, which are spitted onto a stake, are carried down from the rookery on Babel Island by a Cape Barren Islander. The birds are drawn by hand from their burrows at peak weight, killed and salted down, and sold in Tasmania and Victoria. The industry is under the careful control of a government fauna board. The map shows the migration path of the mutton-bird in the Pacific from its breeding-ground at the northern tip of Tasmania, a total distance of 17,000 miles. The migration path in the Indian Ocean of the Fleshly-footed shearwater, another of the Australian petrels, is also shown



A. J. Thornton

few weeks of life, huddle together in crèches on the sand, clustering together at night for warmth and panting profusely by day in the searing sun.

The Red-tailed tropic-bird, the most handsome of Australian sea-birds, is not common; only two regularly used breeding-stations are known, on Raine Island near Torres Strait and in the Abrolhos Islands in the Indian Ocean, on both of which I have camped at one time or another. Their beauty lies in the silky texture of their feathers, white shot with delicate pink, and in red bills and twin tail-streamers of the same colour. They are as phlegmatic as they are colourful, ignoring human watchers unless these are foolish enough to try to handle eggs or young, when the adults register their disapproval by vicious lunges and clanging cries. Tropic-birds feed on squids, and in the mid-afternoon when their prey is deeply submerged and inaccessible the birds take time off to fly around their nesting-grounds in a kind of communal display. There is much back-pedalling of wings and raucous honking as they sweep heavily around the sky: like the auks of the northern seas their webbed feet may be spread to act as brakes when alighting or to assist in steering.

Some tropical cays have colonies of the vicious, far-flying frigate- or man-of-war birds. In addition to fishing for their own food or attending schools of dolphins for the small fry scared by them, these birds also hunt the terns and boobies and following their every movement eventually cause them to disgorge their catch. They do this mostly in the evenings as their victims wing their way back home, their crops heavy with food. Although associated with tropical seas, frigate-birds may appear hundreds of miles south of their normal range: such invasions usually precede the tropical hurricanes or cyclones that disrupt transport in Queensland and Western Australia. At such times many sea-birds become 'wrecked' far inland.

Apart from these involuntary movements, most tropical sea-birds seem relatively sedentary, but no significant bird-ringing has been done in northern Australia. Indeed there are still many islands off the coast yet to be visited by a naturalist; most have only been reported on once or twice. Contrary to popular belief the tropical waters do not abound either in fish or fish-eating birds. In months I spent cruising along the Barrier Reef the numbers of sea-birds I saw were seldom high except in the immediate vicinity of nesting-islands. In general, these

tropical waters do not support the bird numbers that one encounters, say, in Antarctic seas, where a superabundance of food in the form of crustaceous 'krill' attracts great congregations of petrels and other sea-birds. The biggest concentration of sea-birds in Australia is found in the cool waters around Tasmania, whose mutton-birds nest in colonies of a million strong. They may well be Australia's most abundant bird. (The New Zealand mutton-bird is a separate species.)

The Tasmanian mutton-bird has been studied in more detail than any other sea-bird of the region. It is remarkable, among other things, for the extent of its annual migration. Ringing of chicks has established that a 17,000-mile figure-of-eight path is followed between breeding seasons (see map opposite), and whatever the weather encountered the birds make their landfall at the breeding-islands on the same date each year. Other Australian sea-birds probably make analogous movements: the Fleshly-footed shearwater which breeds in south-west Australia, for instance, appears to have a circulatory path around the Indian Ocean when nesting is over. On the other hand, closely related petrels like the Great-winged petrel, which seems to feed on much the same organisms as its more restless cousins, are relatively sedentary, simply dispersing over Australian seas when they have reared their young.

The Tasmanian mutton-bird is not only unique to Australia, it is also the only sea-bird exploited commercially for food in that country. Licensed operators take the young birds from their burrows, kill and clean them and pickle them in salt. They find a ready market in southern Australia; here about £35,000 worth are marketed annually. Mutton-birding is the mainstay of the Cape Barren Islanders, descendants of the extinct Tasmanian aborigine and the early sealers and settlers in Van Dieman's Land.

Formerly the guano deposits laid down on some of the bird islands were a source of wealth to their exploiters, and of tax revenue for the government of the day (if it knew of the guano-getters' activities), but the major deposits are long since worked out. Some, with proper conservation, might have value for the future.

Now, as in the past, man's effect on sea-birds is mainly destructive. Aborigines no longer take many for food, although there is some poaching off the northern coasts by natives from New Guinea and Indonesia who take boobies, terns



A Great-winged petrel (*Pterodroma macroptera*), nesting on the surface at Eclipse Island, off Western Australia, pecks at a proffered hand. Surface nesting is not common among Australian petrels; most go underground. But here they are free from large gulls and other likely threats

and frigate-birds for the pot. But the white Australian is more destructive and with less reason. Thus in recent years the crayfish industry has boomed and there has been a big increase in the number of boats working the crayfish grounds. A shortage of meat with which to bait the cray-pots has resulted and in the Bass Strait region considerable illegal slaughter of sea-birds occurs, the birds being knocked on the head at night by fishermen too lazy to get their bait from the sea. The most accessible of the few remaining colonies of the Australian gannet has been reduced from 2000 breeding pairs to less than 20 pairs through such butchery, and the onslaught still continues with penguins and mutton-birds as the chief victims.

In a few rather insignificant ways man has helped the sea-bird community. Whaling seems to have favoured the Australian gulls just as it has favoured the skuas and Giant petrels of the Antarctic, and a recent extension of range northwards by the Pacific gull in Western Australia

appears to be linked with the operations of a whaling station near Carnarvon. Around the cities, as in Britain, gulls are scavengers fossicking among refuse heaps, meat-works' effluent and so on side by side with crows and starlings.

The birds of Australian seas are still little studied as compared with those of Europe and North America. Their distribution; the effects of ocean currents, sea temperatures, winds and suchlike factors on the economy and habits of the various species; what they eat; their migration and life-spans and many details of their breeding biology are still largely unknown. New species of sea-birds are being added to the Australian list annually and, while many of these are casual visitors, some additions to the breeding list are certain. It should be remembered, too, that the numbers of people watching sea-birds effectively in Australia is relatively small. There will certainly be no lack of scope for the sea-going ornithologist in this part of the world for many years to come.